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**PCT**NOTIFICATION CONCERNING  
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APPLICATION AS PUBLISHED OR REPUBLISHED

To:

VORNDRAN, Charles  
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Atlanta, GA 30339-5948  
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062002-2910

## IMPORTANT NOTICE

International application No.  
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15 November 2004 (15.11.2004)Priority date (day/month/year)  
13 November 2003 (13.11.2003)

Applicant

GEORGIA TECH RESEARCH CORPORATION et al

The International Bureau transmits herewith the following documents:

copy of the international application as published by the International Bureau on 02 June 2005 (02.06.2005) under  
No. WO 2005/050164copy of international application as republished by the International Bureau on under  
No. WOFor an explanation as to the reason for this republication of the international application, reference is made to INID codes (15), (48)  
or (88) (as the case may be) on the front page of the attached document.**SCANNED****DOCKETED**THOMAS, KAYDEN  
HORSTEMEYER & RISLEY, LLP

JUN 06 2005

The International Bureau of WIPO  
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1211 Geneva 20, Switzerland

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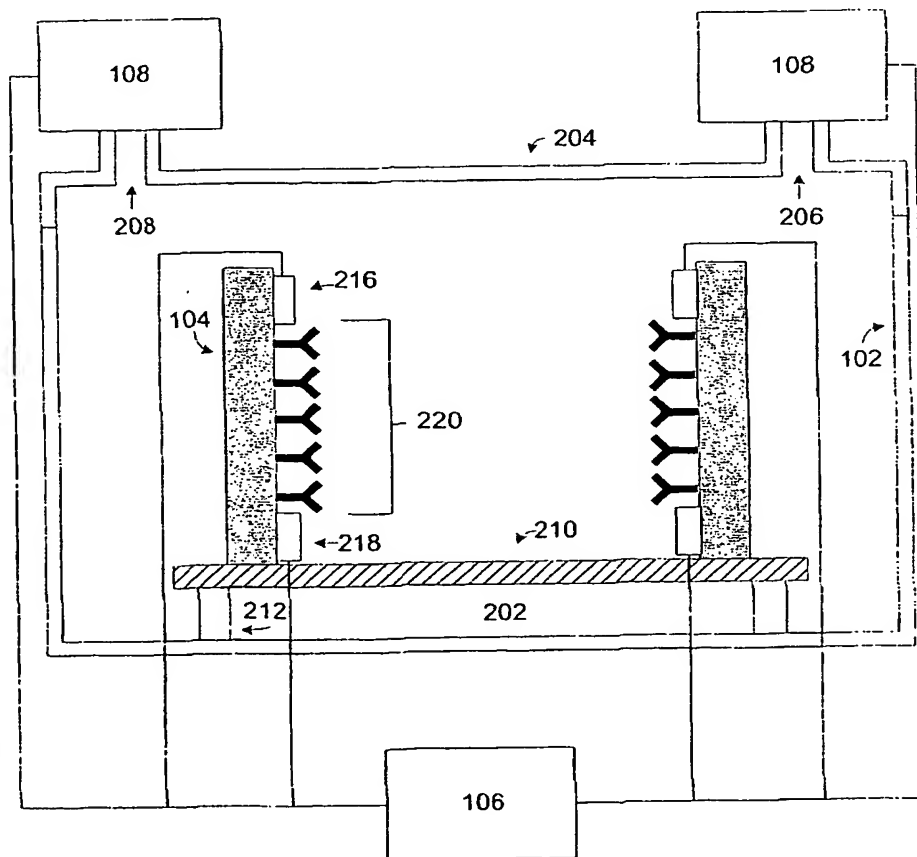
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N.W., Atlanta, GA 30339-5948 (US).

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[Continued on next page]

(54) Title: DETECTION SYSTEMS AND METHODS



(57) Abstract: Detection systems and methods of their use are provided. An exemplary system comprises a chamber (102) for holding culture media, the chamber (102) having a cellular attachment surface (210), and a detector (104) disposed in the chamber (102) comprising a surface (214) modified with a binding agent (220) for binding a target substance wherein the detection system (104) is configured to detect interaction of the target substance with the binding agent (220). The detection can occur in either liquid or vapor phase and the subsequent action of the system is to respond in a programmed and appropriate manner to the binding event by activation of a chemical or physical responder. The system may also respond by communicating information to a control system via an alarm.

THOMAS, KAYDEN  
HORSTEMEIER & RISLEY, L.L.P.

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# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/38021

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C12Q 1/04; C12M 1/34

US CL : 435/7.2, 287.2

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 435/3, 7.2-7.37, 32, 33, 34, 39, 40, 287.2, 287.9; 436/525, 149; 422/68.1, 82.01; 73/54.24, 61.75

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	WO 98/40739 A1 (WILLNER et al.) 17 September 1998 (17.09.1998), see entire document	56-58, 74-82 ----- 1-55, 67-73
X --- Y	US 4,789,804 A (KARUBE et al.) 06 December 1988 (06.12.1988), see entire document.	56-58, 74-82 ----- 1-55, 67-73
Y	US 5,135,852 A (EBERSOLE et al.) 04 August 1992 (04.08.1992), see entire document.	1-58, 67-82
A	US 6,040,191 A (GROW) 21 March 2000 (21.03.2000), see entire document.	1-82
Y	US 5,705,399 A (LARUE) 06 January 1998 (06.01.1998), see entire document.	59-66

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	"&" document member of the same patent family

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